

REMARKS

Applicants have carefully considered the Office Action mailed January 15, 2010, and respond as follows.

Claims 1, 2, 4-16, 18-31, 45, 70-71, and 76-96 are pending. Claims 1, 7-9, 12-14, 22-24, 27, 29-31, 45, 70-71, 80-84, 87-89 and 90-91 have been amended herein. Claims 92-98 have been added. As amended, claims 1, 45, 83-84, 90-92 and 97 are independent claims. No new subject matter has been added.

In the Office Action, the Examiner:

- rejected claims 1, 2, 4, 7, 12-15, 19-20, 26-28, 45, 70-71, 78-81 and 85-88 under 35 USC § 102(b) as being anticipated by Leoni et al. (US 5,152,949);
- rejected claims 1, 2, 4, 7-15, 18-19, 21-23, 25-28, 45, 70-71, 76-82 and 85-89 under 35 USC § 102(b) as being anticipated by Cartwright et al. (US 6,506,325);
- rejected claim 5 under 35 USC § 103(a) as being unpatentable over either Leoni or Cartwright in view of Fritz et al. (US 6,257,866);
- rejected claim 6 under 35 USC § 103(a) as being unpatentable over either Leoni or Cartwright in view of Fritz and further in view of Segen, Jr. (US 6,250,909);
- rejected claim 16 under 35 USC § 103(a) as being unpatentable over either Leoni or Cartwright in view of Palmer (US 4,942,013);
- rejected claim 24 under 35 USC § 103(a) as being unpatentable over Cartwright in view of Gibson (US 5,093,067);
- rejected claims 29-31 under 35 USC § 103(a) as being unpatentable over either Leoni or Cartwright in view of Seemann (US 5,439,635); and
- indicated that claims 83-84 and 90-91 would be allowable if rewritten in independent form.

Applicants acknowledge that claims 83-84 and 90-91 would be allowable if rewritten in independent form.

Claims 83-84 and 90-91

Applicants have rewritten claims 83-84 and 90-91 as independent claims. In so doing, Applicants have amended the originally recited “fluid control aperture” of claims 1 and 45 to “fluid aperture.” Further, in claim 1, Applicants have corrected the typographical error found in the previously recited “deformable member provided defining the boundary” to “a deformable member defining the boundary.” In claim 45, Applicants have amended “said deformable member generating a deformation zone in said compression chamber from a portion of the matrix permeating the strengthener” to clarify that “said deformable member accommodate[s] a deformation zone in said strengthener chamber from a portion of the matrix injected into the strengthener chamber.” Such a deformation zone 74 is shown, for example, in FIG. 11. Additionally, Applicants have removed the recitation previously presented in claims 1 and 45, “wherein said compression wall provides a physical obstacle to a deflection of said deformable member as the matrix is injected into said strengthener chamber,” as the Examiner indicated in her rejections of claim 1 and 45 that this recitation failed to distinguish the claimed invention from the cited references.

Applicants respectfully submit that claims 83-84 and 90-91 are in condition for allowance.

Other Amendments to the Claims

Applicants have amended claims 1 and 45 as discussed above. Further, Applicants have amended certain dependent claims to maintain proper antecedent bases, to clarify the claim language, to correct minor inconsistencies, and/or to modify the recitations. No new subject matter has been added.

Rejections under 35 USC § 102(b)

(a) Claims 1, 2, 4, 7, 12-15, 19-20, 26-28, 45, 70-71, 78-81 and 85-88 stand rejected under 35 USC § 102(b) as being anticipated by Leoni. Applicants respectfully traverse these rejections.

Amended claim 1 recites, in part:

“said compression wall provides a physical obstacle to a deflection of said deformable member as the matrix is injected into said strengthener chamber and when said controlling fluid is injected into said compression chamber.”

Amended claim 45 includes a similar recitation. Support for these amendments can be found, for example, in FIGS. 11 and 12 and the corresponding disclosure at paragraphs [0096] and [0104] of the as-published application.

Leoni fails to disclose a compression wall that provides a physical obstacle to a deflection of a deformable member as matrix is injected into the strengthener chamber and when the controlling fluid is injected into said compression chamber. Leoni discloses a bladder liner 36 (see Figure 1) that is everywhere biased against the conformable cauls 32 when the pressure chamber 38 is pressurized. The pressure in Leoni's pressure chamber 38 forces the bladder liner 36 against the conformable cauls 32, toward the rigid mold 14 and away from the cover 20. Leoni further discloses that when resin is injected into plenum 52, pressure chamber 38 is pressurized to a first predetermined pressure P1. In other words, Leoni's bladder liner 36 is forced against the conformable cauls 32, toward the rigid mold 14, and *away from cover 20* due to pressure P1 when the resin is injected into the plenum 52. Thus, Leoni's cover 20 does not provide a physical obstacle to the deflection of bladder liner 36 when the resin is injected into the plenum 52 and when the pressure chamber is pressurized.

As Leoni fails to disclose each and every element of claims 1 and 45, and as claims 2, 4, 7, 12-15, 19-20, 26-28, 70, 71, 78-81 and 85-88 depend, directly or indirectly, from claims 1 and 45 and contain additional recitations thereto, Leoni fails to anticipate these claims.

(b) Claims 1, 2, 4, 7-15, 18-19, 21-23, 25-28, 45, 70-71, 76-82 and 85-89 stand rejected under 35 USC § 102(b) as being anticipated by Cartwright. Applicants respectfully traverse these rejections.

Cartwright also fails to disclose a compression wall that provides a physical obstacle to a deflection of a deformable member as matrix is injected into the strengthener chamber

and when said controlling fluid is injected into said compression chamber, as required by both claims 1 and 45.

As Cartwright fails to disclose each and every element of claims 1 and 45, and as claims 2, 4, 7-15, 18-19, 21-23, 25-28, 70-71, 76-82 and 85-89 depend, directly or indirectly, from claims 1 and 45 and contain additional recitations thereto, Cartwright fails to anticipate these claims.

Rejections under 35 USC § 103(a)

(a) Claim 5 stands rejected under 35 USC § 103(a) as being unpatentable over either Leoni or Cartwright in view of Fritz. Applicants respectfully traverse this rejection.

Fritz fails to cure the deficiencies of Leoni discussed above. Further, Fritz fails to cure the deficiencies of Cartwright discussed above. Thus, the combination of Leoni or Cartwright in view of Fritz fails to render claim 1 unpatentable. Claim 5 depends from claim 1, and contains additional recitations thereto. Thus, the combination of Leoni or Cartwright in view of Fritz fails to render claim 5 unpatentable.

(b) Claim 6 stands rejected under 35 USC § 103(a) as being unpatentable over either Leoni or Cartwright in view Fritz and further in view of Segen, Jr. Applicants respectfully traverse this rejection.

Neither Fritz nor Segen cure the deficiencies of Leoni discussed above. Further, neither Fritz nor Segen cure the deficiencies of Cartwright discussed above. Thus, the combination of Leoni or Cartwright in view of Fritz and further in view of Segen fails to render claim 1 unpatentable. Claim 6 depends from claim 1, and contains additional recitations thereto. Thus, the combination of Leoni or Cartwright in view of Fritz and further in view of Segen fails to render claim 6 unpatentable.

(c) Claim 16 stands rejected under 35 USC § 103(a) as being unpatentable over either Leoni or Cartwright in view of Palmer. Applicants respectfully traverse this rejection.

Palmer fails to cure the deficiencies of Leoni discussed above. Further, Palmer fails to cure the deficiencies of Cartwright discussed above. Thus, the combination of Leoni or Cartwright in view of Palmer fails to render claim 1 unpatentable. Claim 16 depends from claim 1, and contains additional recitations thereto. Thus, the combination of Leoni or Cartwright in view of Palmer fails to render 16 unpatentable.

(d) Claim 24 stands rejected under 35 USC § 103(a) as being unpatentable over Cartwright in view of Gibson. Applicants respectfully traverse this rejection.

Gibson fails to cure the deficiencies of Cartwright discussed above. Thus, the combination of Cartwright in view of Gibson fails to render claim 1 unpatentable. Claim 24 depends from claim 1, and contains additional recitations thereto. Thus, the combination of Cartwright in view of Gibson fails to render claim 24 unpatentable.

(e) Claims 29-31 stand rejected under 35 USC § 103(a) as being unpatentable over either Leoni or Cartwright in view of Seemann. Applicants respectfully traverse these rejections.

Seemann fails to cure the deficiencies of Leoni discussed above. Further, Seemann fails to cure the deficiencies of Cartwright discussed above. Thus, the combination of Leoni or Cartwright in view of Seemann fails to render claim 1 unpatentable. Claims 29-31 depends from claim 1, either directly or indirectly, and contain additional recitations thereto. Thus, the combination of Leoni or Cartwright in view of Seemann fails to render claims 29-31 unpatentable.

New Claims 92-98

Applicants have added new claims 92-98. Independent claim 92 generally recites a base mold and a cover mold defining therebetween a mold cavity including a strengthener chamber and a compression chamber. The strengthener chamber is configured to receive a strengthener and a matrix. The compression chamber is configured to receive a controlling fluid. A deformable member defines a boundary between the strengthener

chamber and the compression chamber. A compression wall of the cover mold provides a physical obstacle to a deflection of the deformable member when a controlling fluid is injected into the compression chamber. Claims 93-96 depend from claim 92 and include additional recitations directed to the compression chamber, the strengthener chamber or the gap. Independent claim 97 also generally recites a base mold and a cover mold defining therebetween a mold cavity including a strengthener chamber and a compression chamber. The strengthener chamber is configured to receive a strengthener and a matrix. The compression chamber is configured to receive a controlling fluid. The cover mold includes a rigid compression wall. A deformable member defines a boundary between the strengthener chamber and the compression chamber. The compression chamber has a thickness that is substantially uniform along a matrix propagation direction prior to the matrix being injected into said strengthener chamber, and the mold cavity has a non-uniform thickness along the propagation direction. Claim 98 depends from claim 97. No new subject matter has been added.

Conclusion

As every objection and rejection has been addressed by Applicants, Applicants believe that this application is in condition for allowance and respectfully request action to that effect.

Respectfully submitted,
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